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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,179	09/08/2006	Aulis Vakkilainen	1003277-000057	2229

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BUCHANAN, INGERSOLL & ROONEY PC  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER
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DUONG, THANH P

ART UNIT	PAPER NUMBER
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1774

NOTIFICATION DATE	DELIVERY MODE
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02/17/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com  
offserv@bipc.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,179	<b>Applicant(s)</b> VAKKILAINEN ET AL.	
	<b>Examiner</b> TOM P. DUONG	<b>Art Unit</b> 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 56-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 56-68 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicant's remarks and amendments filed on November 24, 2010 have been carefully considered. Claims 1-55 have been canceled. New claims 56-68 have been added. Claims 56-68 are pending in this application.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 56 and 58-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlborg et al. (6,534,022) in view of Sekine et al. (5,997,829) and EP 0298943 (hereinafter EP '943).

Regarding claims 56, 58-61, and 63-68, Carlborg et al. discloses a corrugated mesh sheet and a method of manufacturing a corrugated mesh sheet for treating exhaust gases of combustion engines in open channels, comprising wires, which are covered and openings (Col. 3, lines 24-40 and Col. 4, lines 21-51). which are partially filled by a support having a median pore size of pores over 10 nm (Col. 3, lines 61-67) and having a median particle size over 1.4  $\mu\text{m}$  (Col. 4, lines 5-20); wherein the median particle size of the support is from 1.5 to 3.5  $\mu\text{m}$ ; and wherein said support comprises catalytically active material (Col. 7, lines 40-62); and fibres, which project out from the

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plane of said support (Col. 5, lines 61-64 and Col. 7, lines 15-28); and said substrate comprises at least one corrugated mesh sheet (Col. 4, lines 21-51)

Carlborg et al. fails to disclose area mass of said support (loading density) from 20 to 200 g/m<sup>2</sup>, and the BET specific surface area of said support is from 30 to 300 m<sup>2</sup>/g.

Sekine et al. teaches that it is conventional to provide the porous sheet material with flat and corrugated sheets (Fig 6A and 6B) with a support with a specific surface area of 20 m<sup>2</sup>/g (Col. 6, lines 38-48), and loading density of 30 g/m<sup>2</sup> (Example 7) and support material of alumina (Col. 3, lines 37-45), and a particle size of 0.1 to 10  $\mu$ m to enhance the efficiency of the purifying material (Col. 6, lines 38-48 and Col. 4, lines 20-23).

EP '943 also discloses that it is desirable to provide the catalytically active material with a specific surface area of 70-250 m<sup>2</sup>/g.

Thus, it would have been obvious in view of Sekine et al. and EP '943 to one having ordinary skill in the art to optimize the mesh sheet of JPN '714 with the loading density as taught by Sekine et al. with the specific surface area and catalytically inert particles as taught by Sekine et al. and/or EP '943 in order to provide a mesh sheet with optimum filtering efficiency.

Regarding claim 62, the recitation with respect to the support is "milled" is direct to product by process limitation, and product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even through the prior product

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was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964,966 (Fed. Cir. 1985).

2. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied reference [Sekine et al. '829 and EP '943) as applied to claim 56 above, and further in view of Foss (4,348,362).

Regarding claim 57, the applied references essentially discloses the features of the claimed invention except mesh sheet of 30 to 300.

Foss '362 teaches that it is desirable to provide a filter mesh sheet (80) with mesh size of 20-60 in order to optimize the pressure drop and heat absorption for a filter mesh sheet (Col. 5, lines 57-67)

Thus, it would have been obvious in view of Foss '362 to one having ordinary skill in the art the art to optimize the corrugated mesh sheet of the applied references with the mesh size as taught by Foss '362 in order to optimize the pressure drop and heat absorption for the filter mesh sheet in view of the absence of unexpected results.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOM P. DUONG whose telephone number is (571)272-2794. The examiner can normally be reached on 8:00AM - 4:30PM (IFP).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tom P. Duong/  
Primary Examiner, Art Unit 1774